

**KOREAN UTILITY MODEL REGISTRATION NO. 20-357405**

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**TITLE OF THE INVENTION:** EAR WARMER FOR PROTECTION AGAINST COLDNESS

**ABSTRACT**

The present device is generally directed to an ear warmer for protection against coldness, and more particularly to an ear warmer for protection against coldness in which corrosion is semi-permanently prevented by metal-plating a metal wire inserted inside the ear warmer. As such, the durability and stability during wearing are enhanced through binding an end portion of a connecting portion wire and an end portion of an ear covering portion wire with a metal binding means. In this respect, the comfort of wearing the ear warmer and the warmth-keeping effect are improved by slightly curving the connecting portion wire located in the laryngeal region.

**Representative Drawing**

FIG. 2

**Searching indices:**

ear warmer, ear covering portion, connecting portion, metal wire, metal-plating, metal binding means

**KOREAN UTILITY MODEL REGISTRATION NO. 20-357405****SPECIFICATION****BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a perspective view illustrating an ear warmer adapted to protect against coldness and constructed in accordance with the present invention.

Fig. 2 is a perspective view showing a metal wire to be inserted in the ear warmer of the present invention.

Fig. 3 is a side view showing an embodiment of a metal binding portion of metal wire.

Fig. 4 is an expanded front view of a connecting portion wire.

Fig. 5 is a perspective view showing a metal wire to be inserted in a prior art ear warmer adapted to protect against coldness.

**DESCRIPTION OF SYMBOLS FOR ESSENTIAL PARTS OF DRAWINGS**

100:ear covering portion

200:connecting portion

300:metal wire

310:connecting portion wire

320: ear covering portion wire

A: metal binding portion

330: metal binding means

315:end portion of connecting portion wire

325:end portion of ear covering portion wire

**DETAILED DESCRIPTION OF THE PRESENT INVENTION****OBJECT OF THE PRESENT INVENTION****TECHNICAL FIELD OF THE PRESENT INVENTION AND PRIOR ART THEREOF**

The present invention is generally directed to an ear warmer for protection against coldness, and more particularly to an ear warmer for protection against coldness wherein corrosion is semi-permanently prevented by metal-plating a metal wire inserted as an elastic storing member. As such, the durability and stability during wearing are enhanced through binding an end portion of a connecting portion wire and an end portion of an ear covering portion wire with a metal binding means. Thus, the comfort of wearing the ear warmer and the warmth-keeping effect are improved by way of curving the connecting portion wire

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located in the laryngeal region.

In the conventional ear warmer for protection against coldness, a metal wire is coated with a soft tube made from rubber, PVC material and the like. This is to prevent the exposure of the metal wire, thereby increasing the wearing comfort while preventing injury and corrosion. However, since the soft tube region is often easily damaged and thus exposes the metal wire so that the metal wire easily corrodes and rusts, the outer shell of the ear warmer tends to get rusty and damaged. Moreover, when the metal wire is separated, the wearer tends to get hurt by the end portion of a sharp metal wire. Further, an end portion of a connecting portion wire and an end portion of an ear covering portion wire are bound to form a contact region. This is typically accomplished by using an adhesive and the like between the soft tubes covering the wire. As such, it becomes easily separated due to its poor durability and the end portion of the wire exposed from the soft tube often injures the head of the wearer. In addition, since a connecting wire of the conventional ear warmer is merely rounded, the lower portion of an ear cover excessively tilts inward, which produces pressure upon the ear by the strong elasticity of the metal wire (300) and poor warmth-keeping effect upon the upper portion of the ear.

**TECHNICAL PROBLEMS TO BE SOLVED BY THE PRESENT INVENTION**

The present invention is developed to address and resolve the above-mentioned problems of the prior art. In accordance with the present invention, a soft tube covering a metal wire is removed, the corrosion of a metal wire is semipermanently prevented, the durability of metal wire binding portion and wearing stability are enhanced, and the wearing comfort and warmth-keeping effect of the ear warmer are improved.

**THE CONSTITUTION AND FUNCTIONS OF THE PRESENT INVENTION**

In order to solve the above technical problems, in the present ear warmer for protection against coldness, (1) a metal wire along the outer shape of an ear warmer is metal-plated, (2) a metal binding portion, which binds an end portion of a connecting portion wire and an end portion of an ear covering portion wire with a metal binding means, is provided, and (3) a connecting portion wire located in the laryngeal region is slightly curved.

The present device will be described in detail by referring to Figs. 1 to 5.

Fig. 1 is a perspective view illustrating an ear warmer adapted to protect against coldness and constructed in accordance with the present invention. Ear covering portions (100), which cover the ears to keep warmth of each ear and located at both sides of the ear warmer, are connected via a connecting portion (200), as illustrated in the drawings. A metal wire (300) is inserted into the inner edge along the outer shape of an ear warmer inside an ear

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covering portion (100) and a connecting portion (200). A metal wire (300) maintains the shape of an ear warmer and acts as an elastic restoring member so that the ear covering portion (100) can closely contact the ear through elasticity.

Fig. 2 is a perspective view specifically showing a metal wire (300) inserted in the present ear warmer adapted to protect against coldness. A connecting portion wire (310), which is a wire portion at a connecting portion of an ear warmer, and an ear covering portion wire (320), which is a wire portion at an ear covering portion, are consisted of a single wire as an integral type. A metal wire (300) comprises a metal-binding portion (A) wherein an end portion of the connecting portion wire (310) and an end portion of the ear covering portion wire (320) are bound by a metal binding means (330). Further, as shown in Fig. 4, a central portion (B) of the connecting portion wire bends in a downward direction by a suitable angle, which is preferably  $10^{\circ} \sim 15^{\circ}$  to the horizontal line. On the other hand, the above metal wire (300) is metal-plated, preferably zinc-plated, to semi-permanently prevent corrosion.

Fig. 3 is a side view showing an embodiment of a metal connecting portion (A). As indicated in the drawing, a wire in a solenoid-shape (i.e., metal binding means (330)) winds an end portion of a connecting portion wire (315) and an end portion of an ear covering portion wire (325) in a parallel direction, thereby directly and tightly binding the wires.

On the other hand, Fig. 5 illustrates a metal wire inserted in a conventional ear warmer for protection against coldness. In a conventional ear warmer for cold protection, a metal wire (300) is covered with a soft tube (5) made from rubber, PVC and the like so as to prevent corrosion and improve wearing comfort. However, in this method, the soft tube (500) is vulnerable and easily damaged by friction or bending to form holes. Some foreign substances such as moisture (e.g., wearer's sweat) may enter into the holes. For this reason, the metal wire (300) easily corrodes and is weakened. As such, the rust can spread out from the damaged portion of the soft tube (500) to soak the outer shell, thereby deteriorating the outer shell. Further, in a conventional ear warmer employing a soft tube (500), an end portion of the connecting portion wire (315) and an end portion of the ear covering portion (325) are connected via the soft tube (500) by an adhesive and the like. Thus, the inner wires are not directly bound and can easily separate due to weak durability. Further, the sharp metal wire (300) is exposed between the soft tube (500) and can injure the wearer.

In order to solve the above problems, as described above, instead of deriving a corrosion prevention device via a soft tube (500) covering a metal wire (300), the present invention removes useless soft tubes by metal-plating, preferably zinc plating the metal wire (300) so as to provide semi-permanent prevention of corrosion. Further, an end portion of the connecting portion wire (315) and an end portion of the ear covering portion wire (325) are

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directly bound via metal binding means (330) instead of binding the soft tubes by using adhesive and the like, thereby improving the durability.

On the other hand, referring to Fig. 4, the connecting portion wire (310) of the conventional ear warmer is merely rounded and the lower portion of an ear covering portion (100) excessively tilts inward. This puts too much pressure on the ear by the strong elasticity of metal wire (300) and yields poor warmth-keeping effect at the upper portion of the ear. In the present invention, as shown in Fig. 4 illustrating a central portion (B) of connecting portion wire (310), a connecting wire (310) located in a laryngeal region of a wearer is bent in a downward direction by a suitable angle, preferably  $10^{\circ} \sim 15^{\circ}$  to the horizontal line. This allows the lower portion of the ear covering portion (100) not to be tilted too inwardly, thereby reducing the pressure on the lower portion of the ear. This improves wearing comfort and relatively improves the close contact to the upper portion of the ear, which in turn provides the warmth-keeping effect.

On the other hand, the above-mentioned embodiment and drawings are described for the detailed illustration of the present device only, and not intended to limit the technical scope of the present device. Further, it will be apparent to one skilled in the art that many other substitution, variations and modifications are possible without departing from the technical gist of the present device, and the following claims as well as equivalents thereof should be considered within the scope and spirit of this invention.

**EFFECT OF DEVICE**

As described above, in accordance with the present invention, a soft tube is removed, the corrosion of a metal wire is semi-permanently prevented, the durability of metal wire binding portion and wearing stability are enhanced, the wearing comfort and warmth-keeping effect of the ear warmer are improved.

**CLAIMS**

1. An ear warmer for protection against coldness comprising an integral type metal wire in an inner edge along an outer configuration of the ear warmer, wherein two ear covering portions are integrally bound by a straight type connecting portion,

which is characterized in that the metal wire is metal-plated so as to prevent corrosion, wherein an end portion of a connecting portion wire and an end portion of an ear covering portion wire are bound by a metal binding portion.

2. An ear warmer of Claim 1 which is characterized in that said metal-plating is zinc plating.

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3. An ear warmer of Claim 1 or 2 which is characterized in that said connecting portion wire located in laryngeal region is bent convexly in a downward direction.

4. An ear warmer of Claim 3 which is characterized in that the bending angle of said connecting portion wire is  $10^{\circ} \sim 15^{\circ}$  to the horizontal line.

**DRWAINGS**

(Omitted)